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SERIAL OCT ANALYSIS OF NEOINTIMAL HYPERPLASIA AND COVERAGE ON THE SIROLIMUS ELUTING STENT STRUTS CROSSING OVER THE SIDE-BRANCH VESSELS

ACC Poster Contributions
Ernest N. Morial Convention Center, Hall F
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Session Title: Stable Ischemic Syndrome: Invasive Insights II
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Background: Bifurcation lesions remain as one of the most concern in percutaneous coronary intervention (PCI). On the bifurcation lesion treatment with drug-eluting stents (DES), lack of attachment of the stent struts to the side-branch vessel (SBV) wall might not allow the neointimal coverage on the stent struts. The status and serial changes of neointimal hyperplasia(NIH) and coverage on struts placed across the SBV were not evaluated. The purpose of this study was to evaluate the serial changes of NIH on DES struts with crossing over the SBV using Optical Coherence Tomography (OCT) imaging.

Methods: Twenty two patients treated bifurcation lesion with sirolimus eluting stent crossing over the SBV with serial OCT imaging were enrolled. They were imaged with motorized OCT pull back system (1mm/s) analyzed at 0.3 mm interval. Average first OCT images were obtained at 11months and second were at 26 months after PCI. NIH of jailed struts and main vessel (MV) struts were measured.

Results: Average NIH of jailed strut at second follow up was increased compared to that at first follow up, while average NIH of MV was not changed. Furthermore, the percentage of uncovered jailed strut at the second follow up was significantly decreased compared to that at the first follow up, the percentage of uncovered MV strut at the second follow up was not changed. (Table1)

Conclusions: In this follow up study, delayed endothelialization of jailed struts was observed at more than 20 months follow up.

Serial OCT analysis of neointimal hyperplasia and coverage

	First follow up OCT	Second follow up OCT	P value
Average follow up duration	11 months	26 months	
Jailed struts analysis			
Total no. of strut	207	181	
Mean no. of strut	10 ± 6	9 ± 6	P=0.34
Average neointimal hyperplasia (μm)	31 ± 17	56 ± 23	P<0.01
Percentage of uncovered stent strut (%)	30%	11%	P<0.01
Main vessel struts analysis			
Total no. of strut	774	701	
Mean no. of strut	35 ± 19	32 ± 17	P=0.24
Average neointimal hyperplasia (μm)	112 ± 66	115 ± 57	P=0.82
Percentage of uncovered stent strut (%)	5%	3%	P=0.46

(Values are means ± SD, percentage or number)